Surgical Treatment for Chronic-Contained Rupture of Thoracic Aortic Aneurysm Complicated with Vertebral Erosion: Case Report

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Abstract

In this article, we present the clinical case and successful surgical treatment of aneurysm of the arch and the descending aorta with the destruction of the vertebral bodies.

Keywords: Aortic aneurysm; Thoracic; Aortic rupture; Thoracic vertebrae; Spinal diseases

Case Presentation

A 43-year-old man was admitted to the hospital with complaints of foreign body sensation, periodic pressing chest pain, shortness of breath on slight exertion, and paroxysmal dry cough. According to anamnesis, at the age of 20, the patient had a fall from approximately 6-m height. His six-month-old radiograph showed an aneurysm of the thoracic aorta (Figure 1a). Multi-Spiral Computed Tomography (MSCT) angiography identified signs of aneurysm of the thoracic aorta that infiltrated its wall, neoplasm of the upper floor of the posterior mediastinum, and destruction of vertebral bodies (Th3, Th4, And Th5) and fourth rib on the left (Figure 1b-d).

Figure 1: (A) Images of X-ray of the chest. The arrow indicates the aneurysm of the thoracic aorta. (B-D) Images of multi-spiral CT angiography of the chest before surgery.
reached 24°C, cardiopulmonary bypass was abandoned; this was left lung and vertebral bodies, th3 and th4. When the temperature aorta, distal to the arch; the aorta soldered to the upper lobe of in the projection of the upper and middle third of the descending portion and the aortic arch was 60 mm. Major inflammation was noted at the sinotubular junction was about 30-35 mm and that at the level of the ascending aorta, its diameter at the sinotubular was initiated; and the patient’s body was cooled to 24°C.

On visualization of the aorta, its diameter at the sinotubular junction was about 30-35 mm and that at the level of the ascending portion and the aortic arch was 60 mm. Major inflammation was noted in the projection of the upper and middle third of the descending aorta, distal to the arch; the aorta soldered to the upper lobe of left lung and vertebral bodies, th3 and th4. When the temperature reached 24°C, cardiopulmonary bypass was abandoned; this was followed by antegrade perfusion to the brain at a flow rate of 15 ml/kg/minute, and aortotomy was performed. The lumen of the aorta had thrombotic masses with varying degrees of organization. Vertebral bodies with erosive changes were visualized on these masses after they were removed (Figure 2a). According to express histological analysis, a modified aneurysmal aortic wall tissue was involved in the destruction of the vertebral bodies. Sinuses of valsalva were not expanded, when viewed from the tricuspid aortic valve without pathology. Prosthesis in the ascending portion of the arch and the descending thoracic aorta at the level of the 5-6, and brachiocephalic arteries were manipulated using vascular prosthesis (vascutek siena plexus 26). On the fourth day after surgery, the patient was transferred from the intensive care unit to the profile department. During post-operative period, the patient showed symptoms of respiratory failure, severe asthenic syndrome, signs of exudative pleurisy that required pleural puncture, and prolonged antibiotic therapy (sulperazon) due to the long sub-febrile fever. On the forty-sixth day after operation, the patient left the hospital in good condition. Post-operative most showed defects on the left surface of the vertebral th3-th4-th5 and the head of the fourth rib at the level of diligence modified para-aortic tissue. This is a type of atrophy caused by chronic aneurysmal pressure (Figure 2b).

Operative technique

The operation was planned as follows: after the median sternotomy, cardiopulmonary bypass connection was provided; arterial cannula was inserted into the right subclavian artery, and venous cannula into the right atrium; cardiopulmonary bypass was initiated; and the patient’s body was cooled to 24°C.

Concerning Surgical Treatment, aggressive removal of aneurysmal wall near the spinal cord is not recommended because of possible damage to the spinal cord. Sometimes, it is sufficient to eliminate the pressure pulsating aneurysmal wall to prevent compression of the surrounding tissues. In such cases, it is possible to insert a stent-graft in the absence of inflammation. However, there are reports that indicate the progress of symptoms of compression in the surrounding tissues after the stent-graft, thus requiring another open intervention in the long term.

In the clinical case presented here, the strategy of performing an open heart surgery was chosen as a tumour process was suspected in the projection of the aneurysm, and the spinal cord was located at a sufficient distance from the site of destruction of the vertebrae (as seen in the most findings).

References


